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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,799	12/08/2003	Brian A. Hargreaves	STFUP142/S02-300	4317
58766	7590	06/27/2008		
Beyer Law Group LLP P.O. BOX 1687 Cupertino, CA 95015-1687			EXAMINER VAUGHN, MEGANNE	
			ART UNIT	PAPER NUMBER
			2831	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/731,799	Applicant(s) HARGREAVES, BRIAN A.	
	Examiner MEGANN E. VAUGHN	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 2-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/8/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Deimling (US 6339332).

Regarding claim 1, Deimling discloses in figures 3-7 a method of separating species signals in a composite magnetic resonance imaging signal (Abstract) comprising the steps of: a) applying a series of steady-state free precession (balanced SSFP) pulse sequences (FISP; column 4, lines 55-65), b) measuring magnetic resonance signals during transient periods for the balanced SSFP sequences as steady-state signals evolve (column 4, line 66- column 5, line 2), and c) fitting the transient response of the measured signals to a model to identify the smallest number of discrete exponential terms which provide a satisfactory representation of the measured data (see figures; column 4, lines 21-29).

3. Claims 1 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hargreaves et al (*Characterization and Reduction of the Transient Response in Steady-State MR Imaging*).

Regarding claim 1, Hargreaves et al discloses in figures 10 and 11 a method of separating species signals in a composite magnetic resonance imaging signal comprising the steps of: a) applying a series of steady-state free precession (balanced SSFP) pulse sequences (pages 153-154, *Experimental Methods*; figure 9), b) measuring magnetic resonance signals during transient periods for the balanced SSFP sequences as steady-state signals evolve (pages 153-154, *Experimental Methods*; figure 10 or 11), and c) fitting the transient response of the measured signals to a model to identify the smallest number of discrete exponential terms which provide a satisfactory representation of the measured data (see figures 10 and 11).

Regarding claim 18, Hargreaves et al discloses that before step a) a plurality of preparation pulses are applied, wherein an inversion pulse is applied with the preparation pulses and magnetization starts at a negative value (page 153, *Catalyzing Refocused-SSFP*; figure 9).

Regarding claim 19, Hargreaves et al discloses that before step a) a plurality of preparation pulses are applied and magnetization is saturated thereby (page 153, *Catalyzing Refocused-SSFP*; figure 9).

Regarding claim 20, Hargreaves et al discloses that before step a) a plurality of preparation pulses are applied and magnetization starts in a steady state and is inverted in the steady state (page 153, *Catalyzing Refocused-SSFP*; figure 9).

Allowable Subject Matter

4. Claims 2-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an examiner's statement of reasons for allowance:

Claims 2-17 are allowable over the prior art of record because the prior art of record does not teach or disclose a method of separating species signals in a composite magnetic resonance imaging signal wherein evolution of the steady-state in each balanced SSFP pulse sequence is purely exponential, in combination with the remaining limitations of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Hargreaves et al (US 6452387).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGANN E. VAUGHN whose telephone number is (571)272-8927. The examiner can normally be reached on 8 am- 5 pm.

Art Unit: 2831

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MEV
Patent Examiner Art Unit 2831
6/23/2008

/Diego Gutierrez/
Supervisory Patent Examiner,
Art Unit 2831